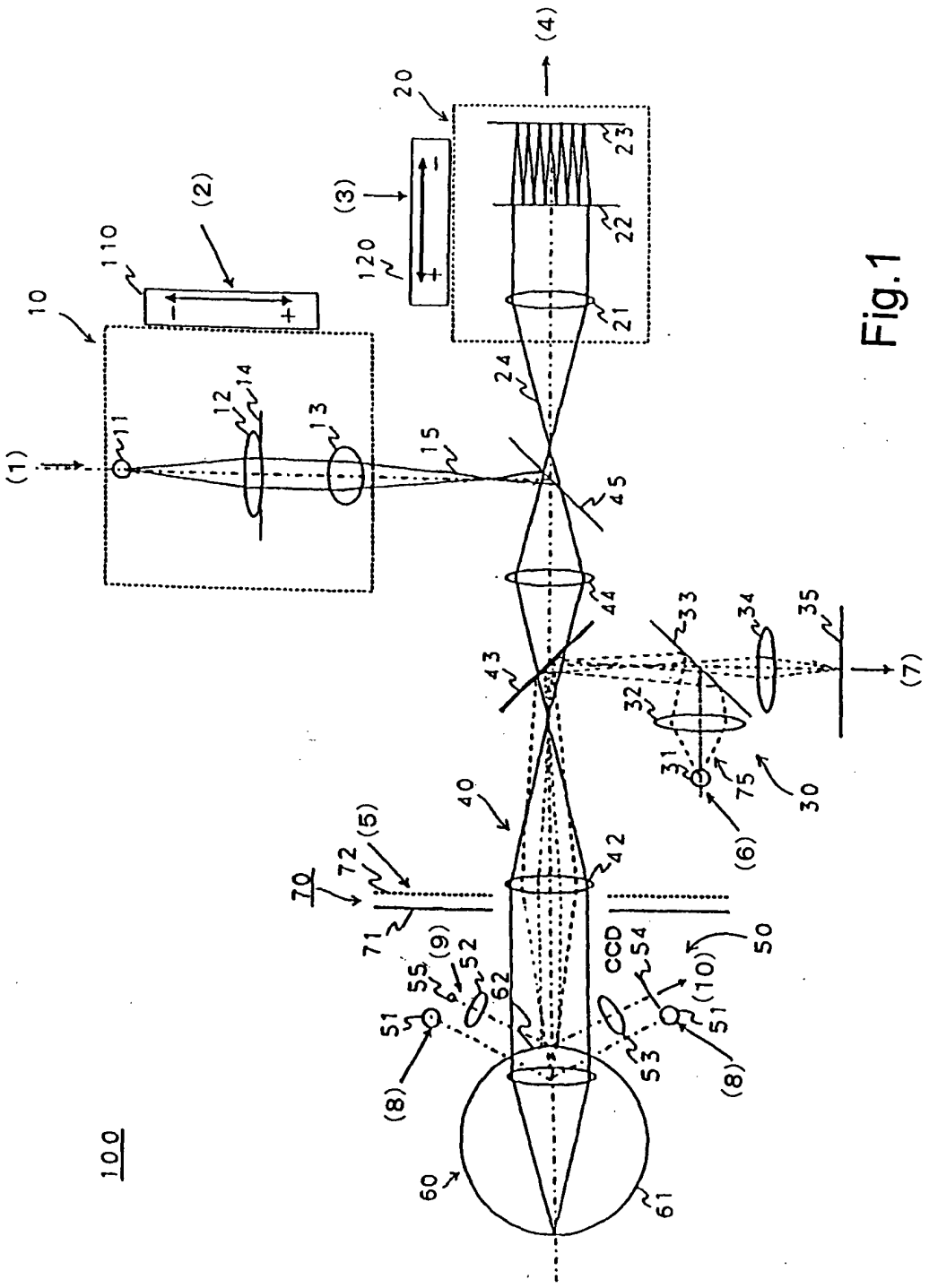
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(4)
(5)
(6)
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(8)
(9)
(10)
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72
75
100
110
120
CCD

Fig.1

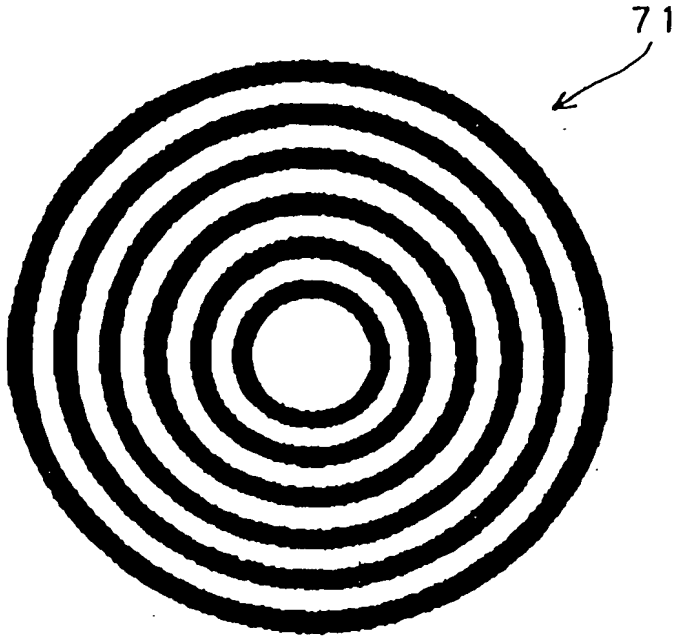


Fig.2

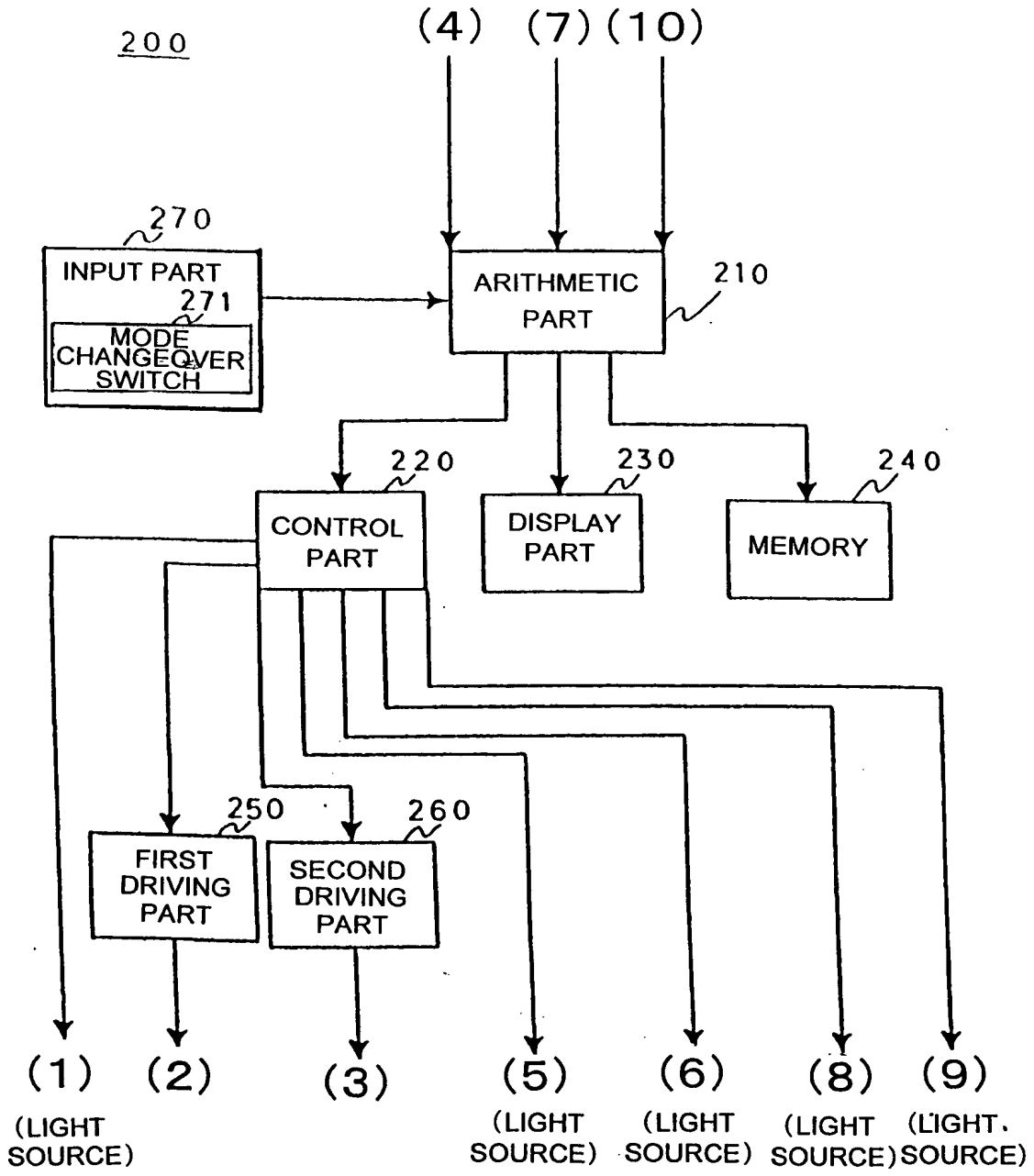

200
(4) (7) (10)
270
INPUT PART
271
MODE CHANGEOVER SWITCH
ARITHMETIC PART
210
220
230
240
CONTROL PART
DISPLAY PART
MEMORY
250
260
FIRST DRIVING PART
SECOND DRIVING PART
(1) (2) (3) (5) (6) (8) (9)
(LIGHT SOURCE)
(LIGHT SOURCE)
(LIGHT SOURCE)
(LIGHT SOURCE)
(LIGHT SOURCE)

Fig.3

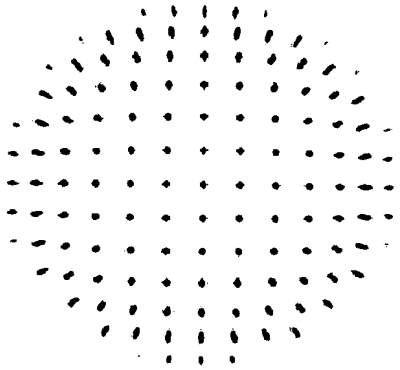
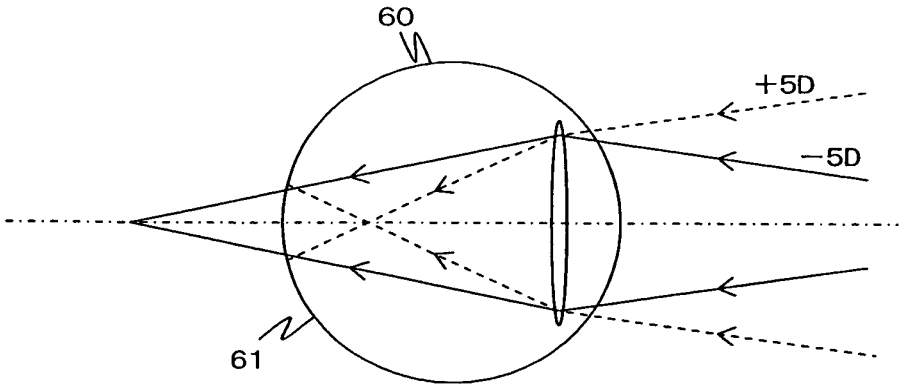
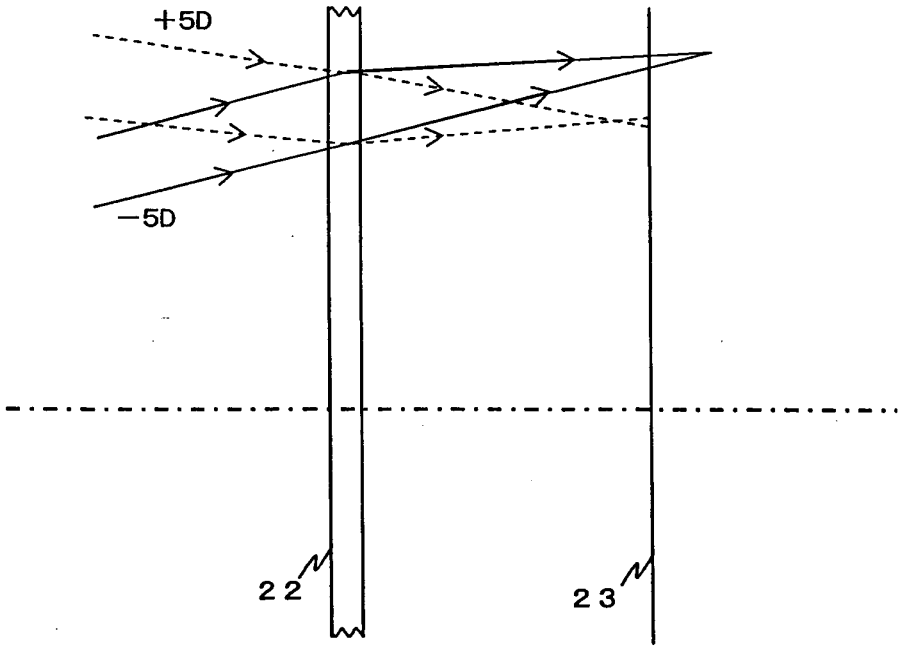


Fig.4

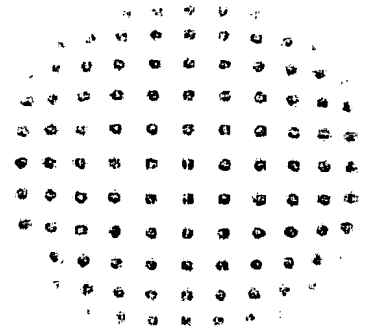


AT A TIME OF POSITIONAL DEVIATION OF PROJECTION SIDE
(a)

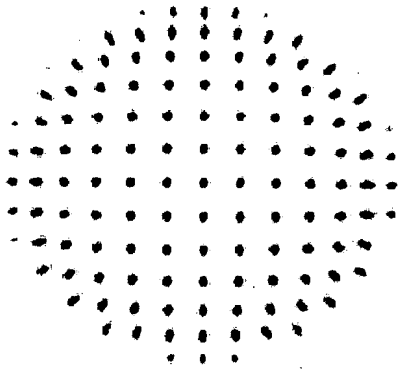


AT A TIME OF POSITIONAL DEVIATION OF LIGHT RECEIVING SIDE
(b)

Fig.5

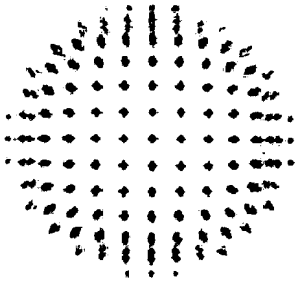


PROJECTION SIDE+5 D
(a)

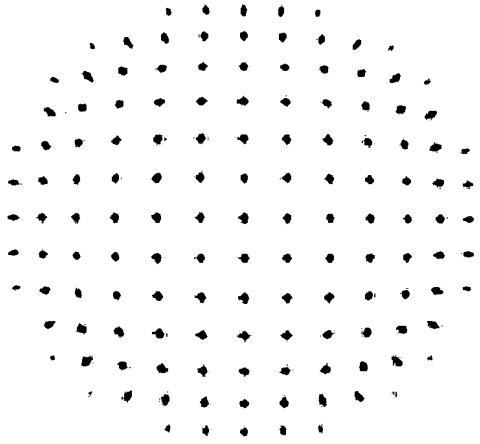


PROJECTION SIDE—5 D
(b)

Fig.6



LIGHT RECEIVING SIDE + 5 D
(a)



LIGHT RECEIVING SIDE − 5 D
(b)

Fig.7

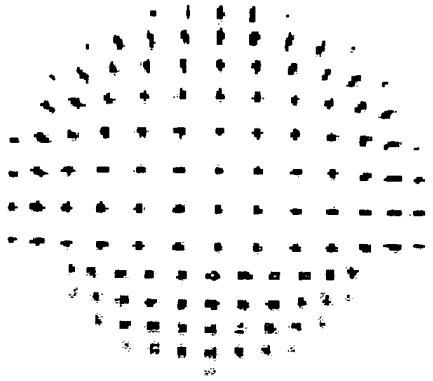


Fig.8

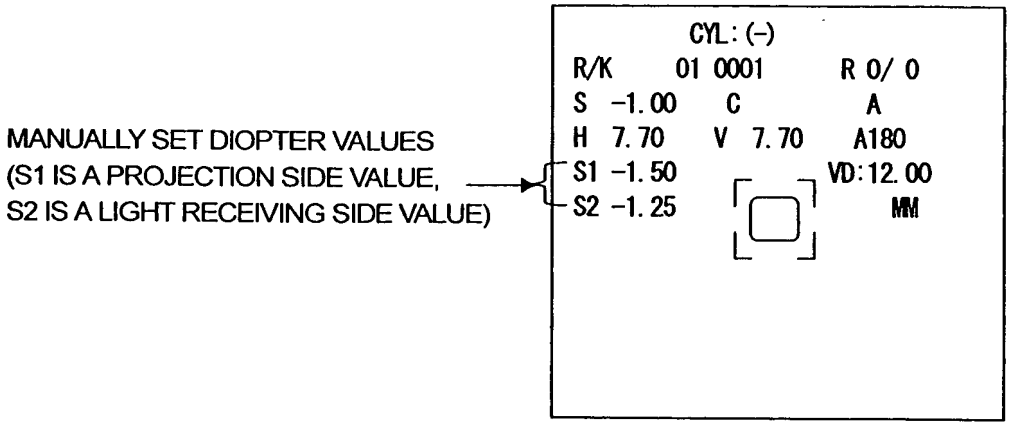

MANUALLY SET DIOPTER VALUES
(S1 IS A PROJECTION SIDE VALUE,
S2 IS A LIGHT RECEIVING SIDE VALUE)
CYL: (-)
R/K 01 0001 R 0/ 0
S -1.00 C A
H 7.70 V 7.70 A180
S1 -1.50 VD:12.00
S2 -1.25 MM

Fig.9

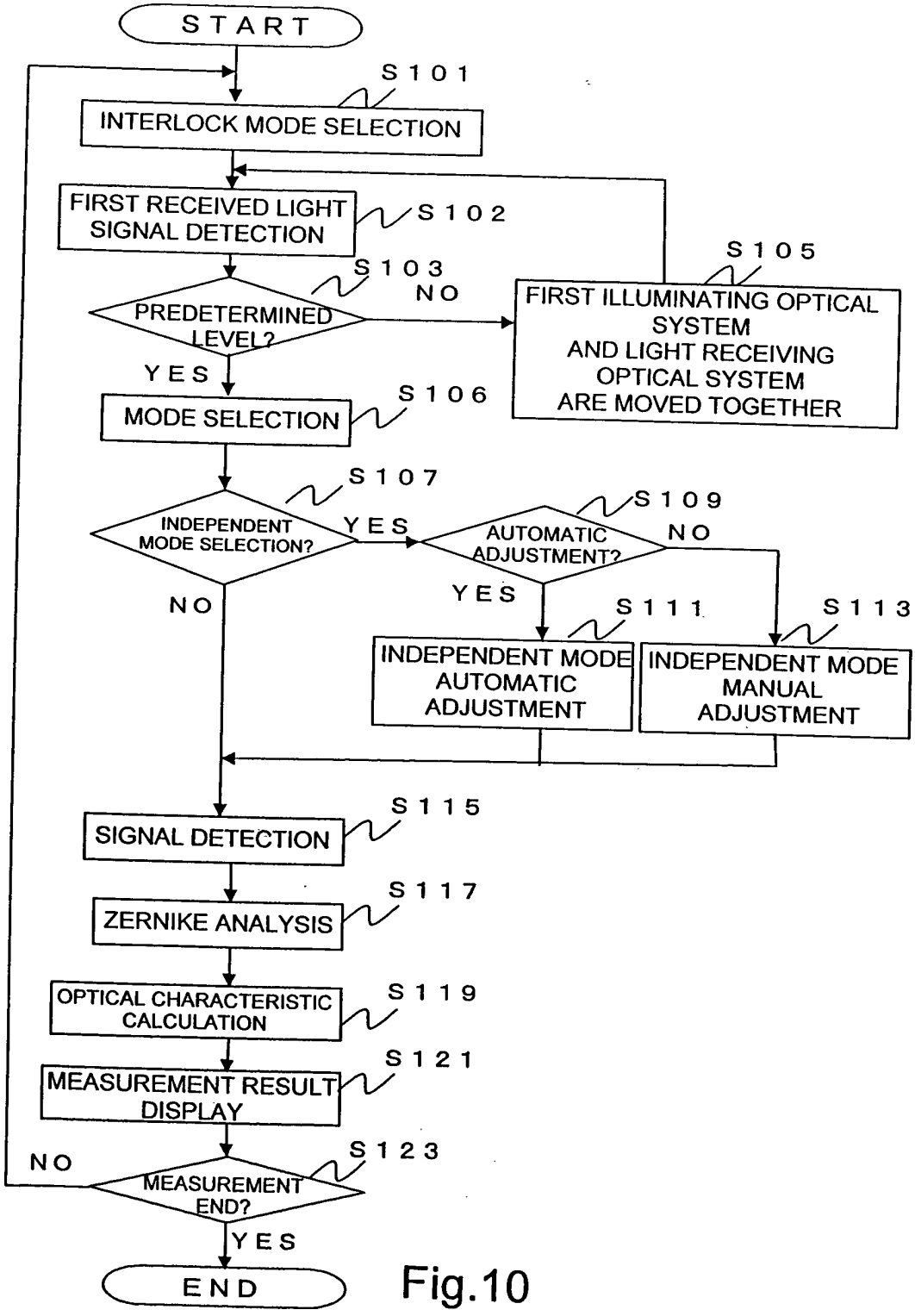

START
S101
INTERLOCK MODE SELECTION
FIRST RECEIVED LIGHT SIGNAL DETECTION
S102
S103
PREDETERMINED LEVEL?
NO
S105
FIRST ILLUMINATING OPTICAL SYSTEM AND LIGHT RECEIVING OPTICAL SYSTEM ARE MOVED TOGETHER
YES
MODE SELECTION
S106
S107
INDEPENDENT MODE SELECTION?
YES
S109
AUTOMATIC ADJUSTMENT?
NO
YES
NO
S111
S113
INDEPENDENT MODE AUTOMATIC ADJUSTMENT
INDEPENDENT MODE MANUAL ADJUSTMENT
S115
SIGNAL DETECTION
S117
ZERNIKE ANALYSIS
S119
OPTICAL CHARACTERISTIC CALCULATION
S121
MEASUREMENT RESULT DISPLAY
S123
NO
MEASUREMENT END?
YES
END

Fig.10

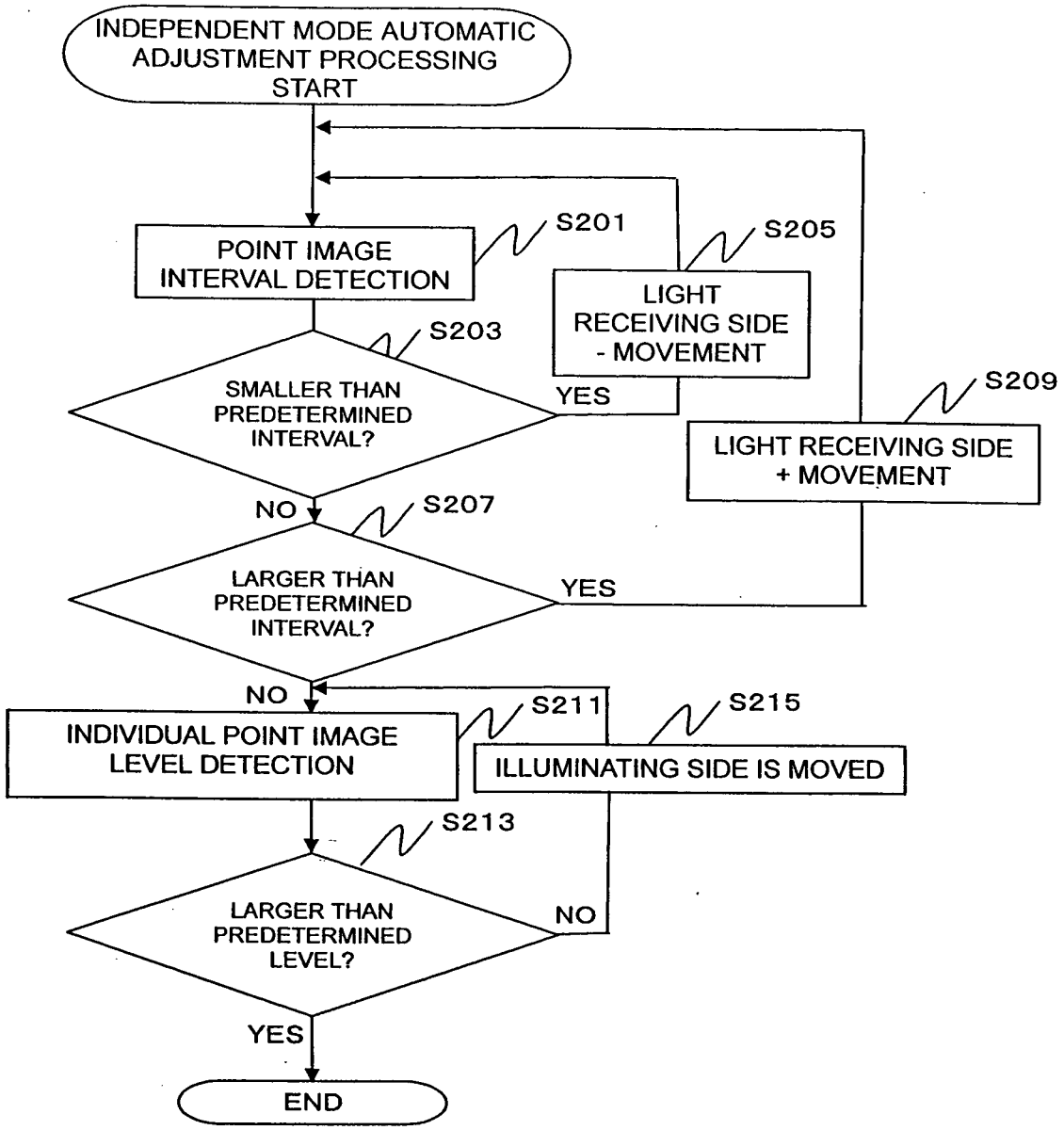

INDEPENDENT MODE AUTOMATIC ADJUSTMENT PROCESSING START
POINT IMAGE INTERVAL DETECTION
S201
S205
LIGHT RECEIVING SIDE - MOVEMENT
S203
SMALLER THAN PREDETERMINED INTERVAL?
YES
S209
LIGHT RECEIVING SIDE + MOVEMENT
NO
S207
LARGER THAN PREDETERMINED INTERVAL?
YES
NO
S211
S215
INDIVIDUAL POINT IMAGE LEVEL DETECTION
ILLUMINATING SIDE IS MOVED
S213
LARGER THAN PREDETERMINED LEVEL?
NO
YES
END

Fig.11

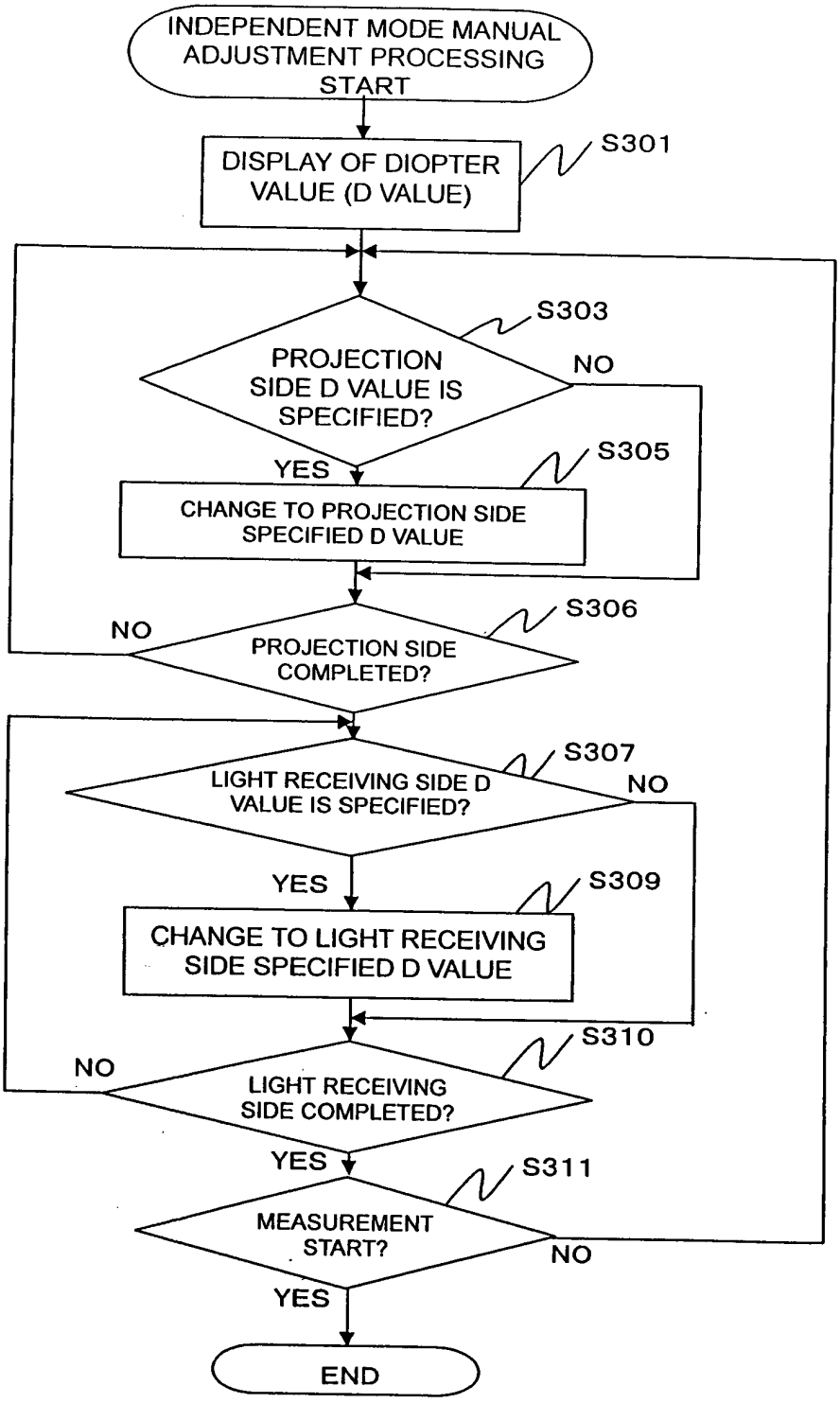

INDEPENDENT MODE MANUAL ADJUSTMENT PROCESSING START
DISPLAY OF DIOPTER VALUE (D VALUE)
S301
PROJECTION SIDE D VALUE IS SPECIFIED?
S303
NO
YES
CHANGE TO PROJECTION SIDE SPECIFIED D VALUE
S305
PROJECTION SIDE COMPLETED?
S306
NO
LIGHT RECEIVING SIDE D VALUE IS SPECIFIED?
S307
NO
YES
CHANGE TO LIGHT RECEIVING SIDE SPECIFIED D VALUE
S309
LIGHT RECEIVING SIDE COMPLETED?
S310
NO
YES
MEASUREMENT START?
S311
NO
YES
END

Fig.12

i	2j - i	
0	0	1
1	-1	$r \sin(t)$
1	1	$\cos(t)\, r$
2	-2	$r^2 \sin(2t)$
2	0	$2r^2 - 1$
2	2	$r^2 \cos(2t)$
3	-3	$r^3 \sin(3t)$
3	-1	$(3r^3 - 2r)\sin(t)$
3	1	$(3r^3 - 2r)\cos(t)$
3	3	$r^3 \cos(3t)$
4	-4	$r^4 \sin(4t)$
4	-2	$(4r^4 - 3r^2)\sin(2t)$
4	0	$6r^4 - 6r^2 + 1$
4	2	$(4r^4 - 3r^2)\cos(2t)$
4	4	$r^4 \cos(4t)$
5	-5	$r^5 \sin(5t)$
5	-3	$(5r^5 - 4r^3)\sin(3t)$
5	-1	$(10r^5 - 12r^3 + 3r)\sin(t)$
5	1	$(10r^5 - 12r^3 + 3r)\cos(t)$
5	3	$(5r^5 - 4r^3)\cos(3t)$
5	5	$r^5 \cos(5t)$
6	-6	$r^6 \sin(6t)$
6	-4	$(6r^6 - 5r^4)\sin(4t)$
6	-2	$(15r^6 - 20r^4 + 6r^2)\sin(2t)$
6	0	$20r^6 - 30r^4 + 12r^2 - 1$
6	2	$(15r^6 - 20r^4 + 6r^2)\cos(2t)$
6	4	$(6r^6 - 5r^4)\cos(4t)$
6	6	$r^6 \cos(6t)$

Fig.13

i	2j - i	
0	0	1
1	-1	y
1	1	x
2	-2	$2yx$
2	0	$2x^2 + 2y^2 - 1$
2	2	$x^2 - y^2$
3	-3	$3yx^2 - y^3$
3	-1	$3yx^2 + 3y^3 - 2y$
3	1	$3x^3 + 3xy^2 - 2x$
3	3	$x^3 - 3xy^2$
4	-4	$4yx^3 - 4y^3x$
4	-2	$8yx^3 + 8y^3x - 6yx$
4	0	$6x^4 + 12x^2y^2 + 6y^4 - 6x^2 - 6y^2 + 1$
4	2	$4x^4 - 4y^4 - 3x^2 + 3y^2$
4	4	$x^4 - 6x^2y^2 + y^4$
5	-5	$5yx^4 - 10y^3x^2 + y^5$
5	-3	$15yx^4 + 10y^3x^2 - 5y^5 - 12yx^2 + 4y^3$
5	-1	$10yx^4 + 20y^3x^2 + 10y^5 - 12yx^2 - 12y^3 + 3y$
5	1	$10x^5 + 20x^3y^2 + 10xy^4 - 12x^3 - 12xy^2 + 3x$
5	3	$5x^5 - 10x^3y^2 - 15xy^4 - 4x^3 + 12xy^2$
5	5	$x^5 - 10x^3y^2 + 5xy^4$
6	-6	$6yx^5 - 20y^3x^3 + 6y^5x$
6	-4	$24yx^5 - 24y^5x - 20yx^3 + 20y^3x$
6	-2	$30yx^5 + 60y^3x^3 + 30y^5x - 40yx^3 - 40y^3x + 12yx$
6	0	$20x^6 + 60x^4y^2 + 60x^2y^4 + 20y^6 - 30x^4 - 60x^2y^2 - 30y^4 + 12x^2 + 12y^2 - 1$
6	2	$15x^6 + 15x^4y^2 - 15x^2y^4 - 15y^6 - 20x^4 + 20y^4 + 6x^2 - 6y^2$
6	4	$6x^6 - 30x^4y^2 - 30x^2y^4 + 6y^6 - 5x^4 + 30x^2y^2 - 5y^4$
6	6	$x^6 - 15x^4y^2 + 15x^2y^4 - y^6$

Fig.14

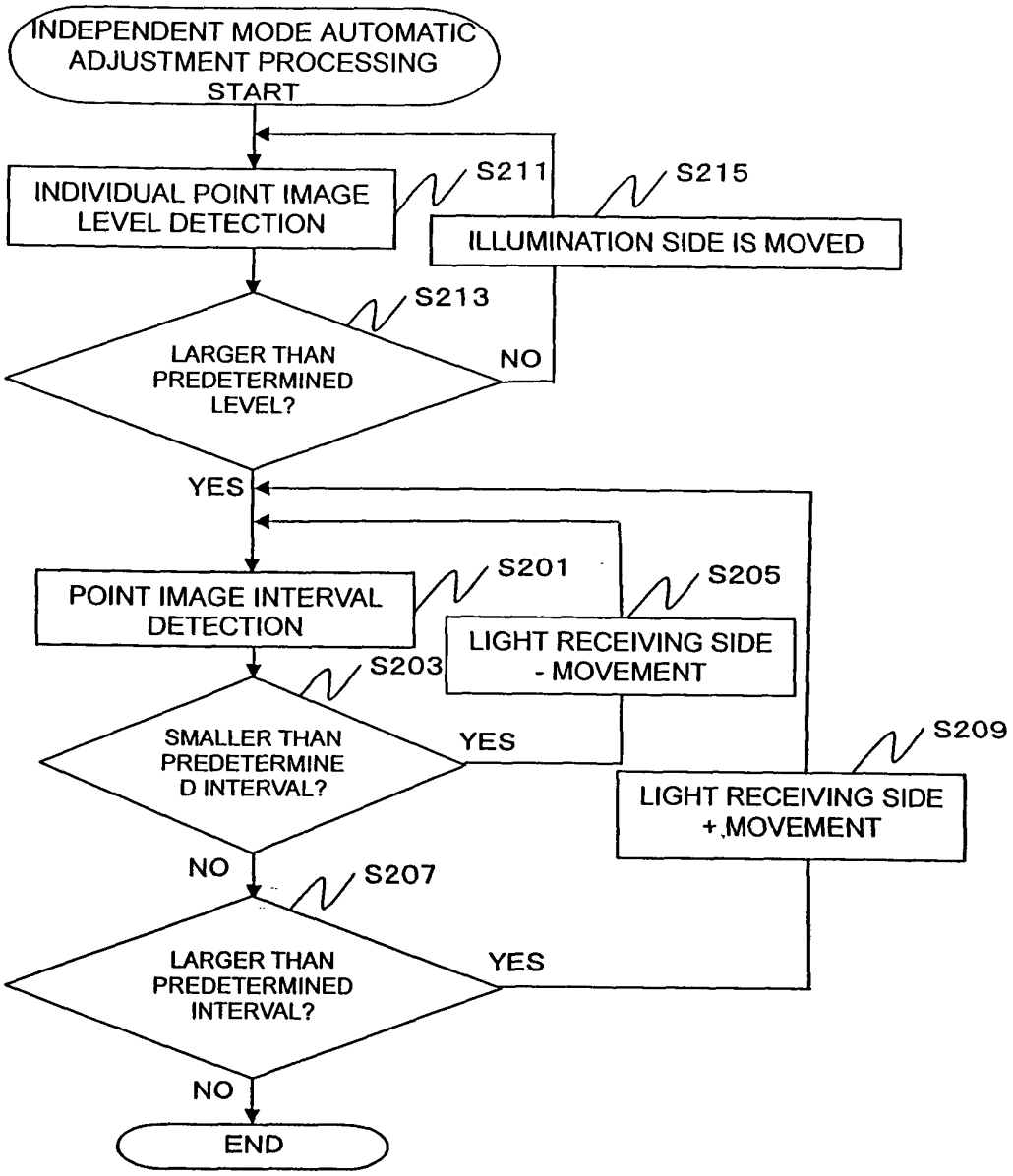

INDEPENDENT MODE AUTOMATIC ADJUSTMENT PROCESSING START
INDIVIDUAL POINT IMAGE LEVEL DETECTION
S211
S215
ILLUMINATION SIDE IS MOVED
S213
LARGER THAN PREDETERMINED LEVEL?
NO
YES
POINT IMAGE INTERVAL DETECTION
S201
S205
LIGHT RECEIVING SIDE - MOVEMENT
S203
SMALLER THAN PREDETERMINED INTERVAL?
YES
S209
LIGHT RECEIVING SIDE + MOVEMENT
NO
S207
LARGER THAN PREDETERMINED INTERVAL?
YES
NO
END

Fig.15

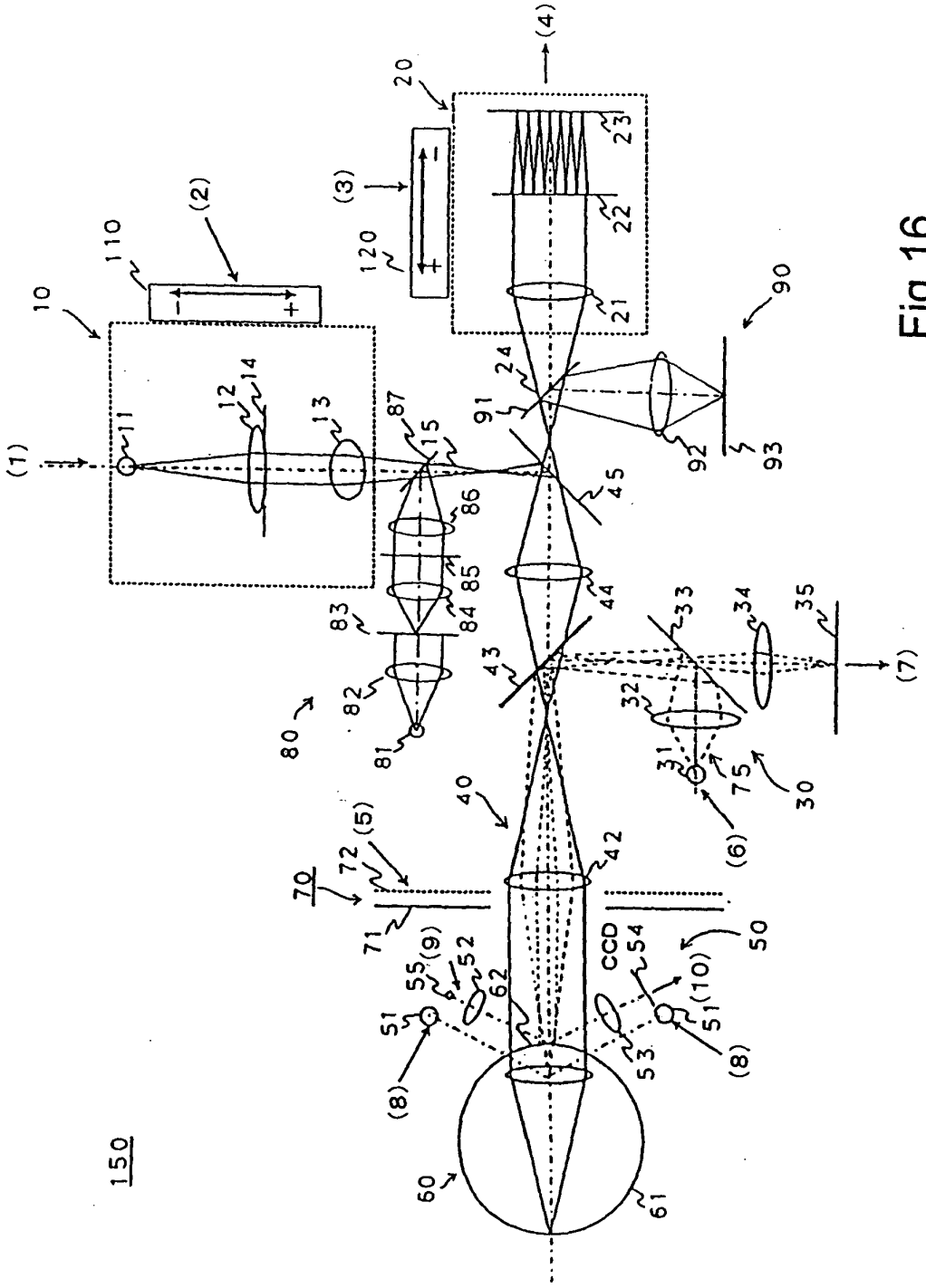

(1)
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Fig.16

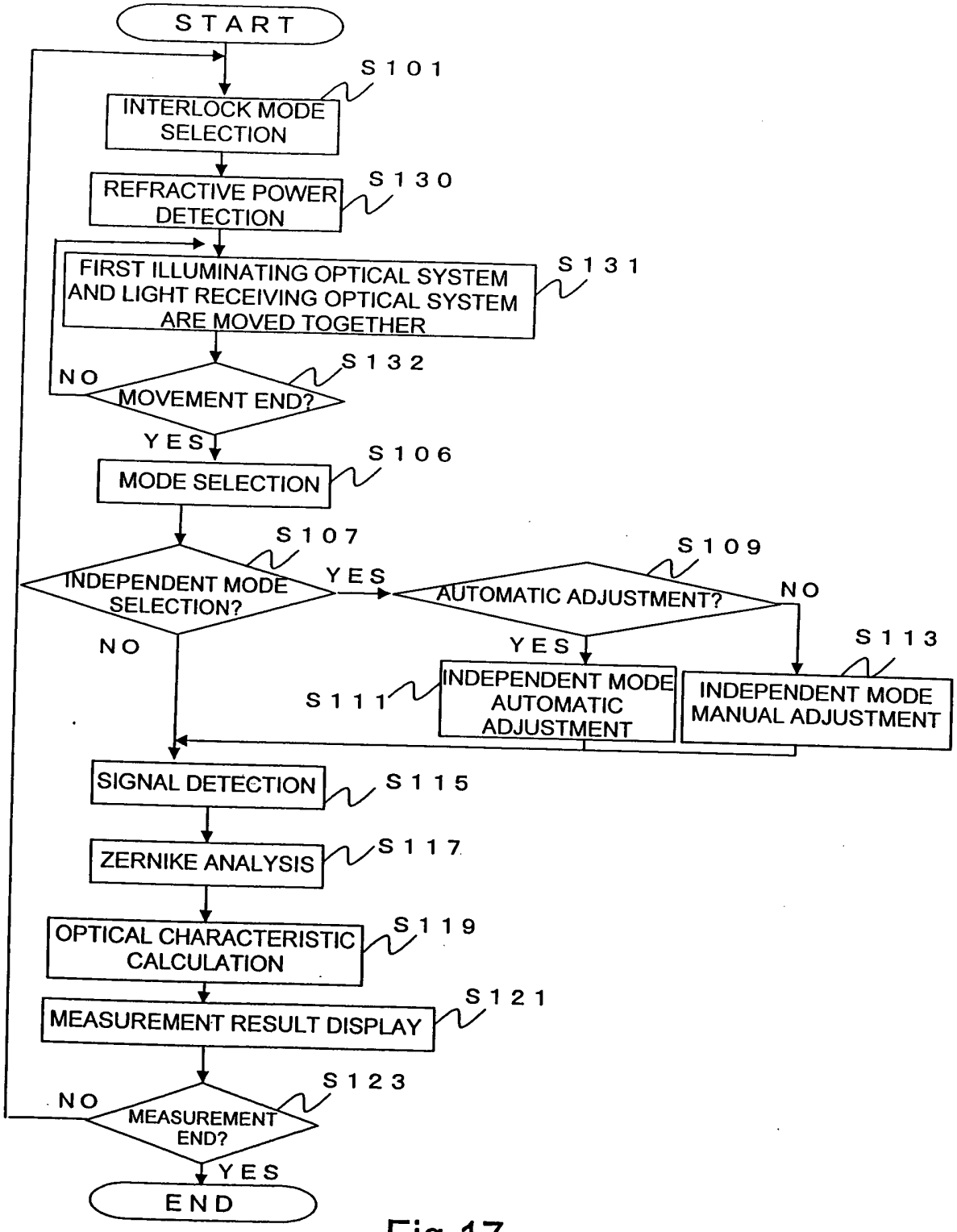

START
S101
INTERLOCK MODE SELECTION
S130
REFRACTIVE POWER DETECTION
S131
FIRST ILLUMINATING OPTICAL SYSTEM AND LIGHT RECEIVING OPTICAL SYSTEM ARE MOVED TOGETHER
S132
NO
MOVEMENT END?
YES
S106
MODE SELECTION
S107
INDEPENDENT MODE SELECTION?
YES
S109
AUTOMATIC ADJUSTMENT?
NO
YES
NO
S111
INDEPENDENT MODE AUTOMATIC ADJUSTMENT
S113
INDEPENDENT MODE MANUAL ADJUSTMENT
SIGNAL DETECTION
S115
ZERNIKE ANALYSIS
S117
OPTICAL CHARACTERISTIC CALCULATION
S119
MEASUREMENT RESULT DISPLAY
S121
S123
NO
MEASUREMENT END?
YES
END

Fig.17

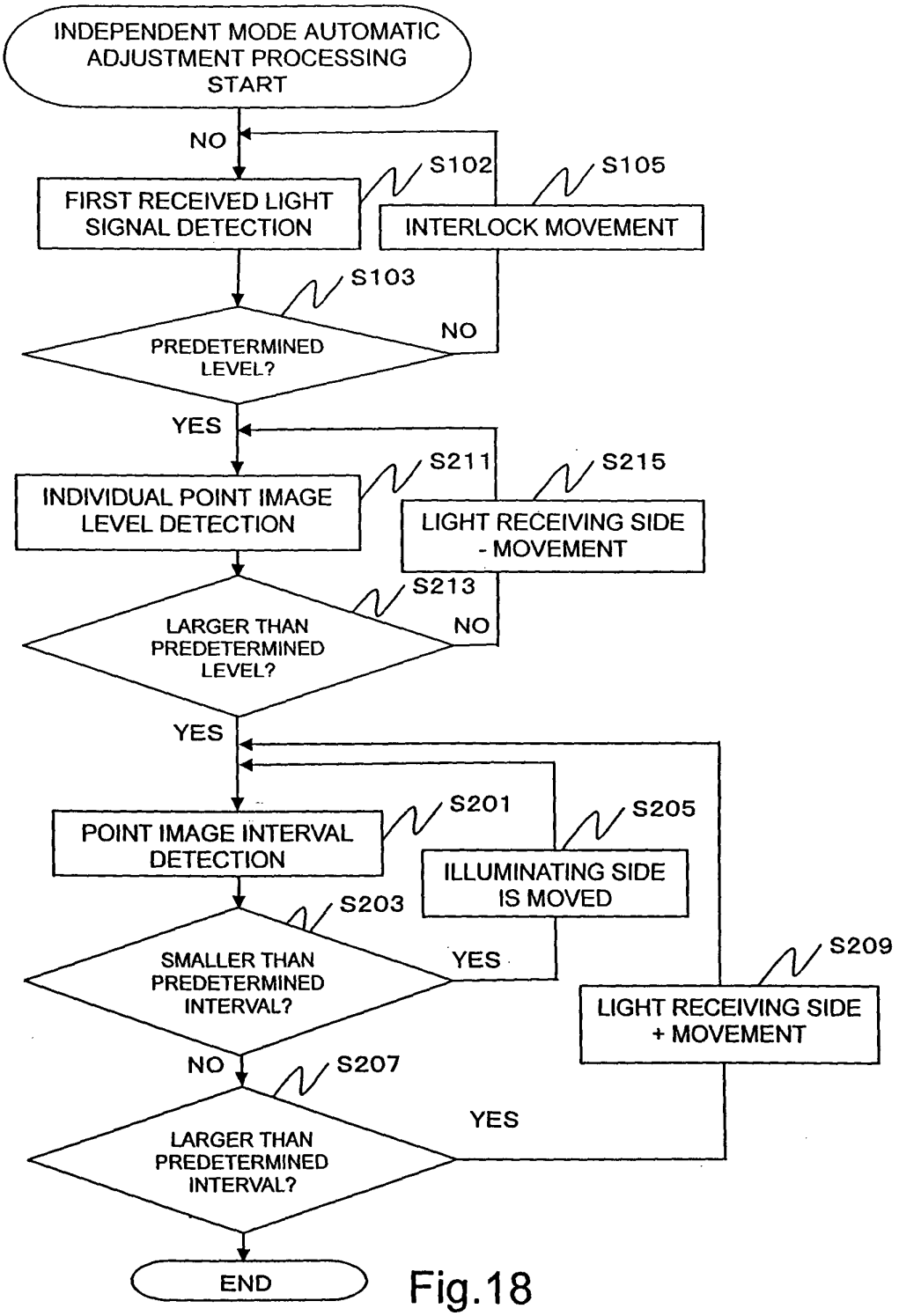

INDEPENDENT MODE AUTOMATIC ADJUSTMENT PROCESSING START
NO
S102
FIRST RECEIVED LIGHT SIGNAL DETECTION
S105
INTERLOCK MOVEMENT
S103
PREDETERMINED LEVEL?
NO
YES
S211
INDIVIDUAL POINT IMAGE LEVEL DETECTION
S215
LIGHT RECEIVING SIDE - MOVEMENT
S213
LARGER THAN PREDETERMINED LEVEL?
NO
YES
S201
POINT IMAGE INTERVAL DETECTION
S205
ILLUMINATING SIDE IS MOVED
S203
SMALLER THAN PREDETERMINED INTERVAL?
YES
S209
LIGHT RECEIVING SIDE + MOVEMENT
NO
S207
LARGER THAN PREDETERMINED INTERVAL?
YES
END

Fig.18

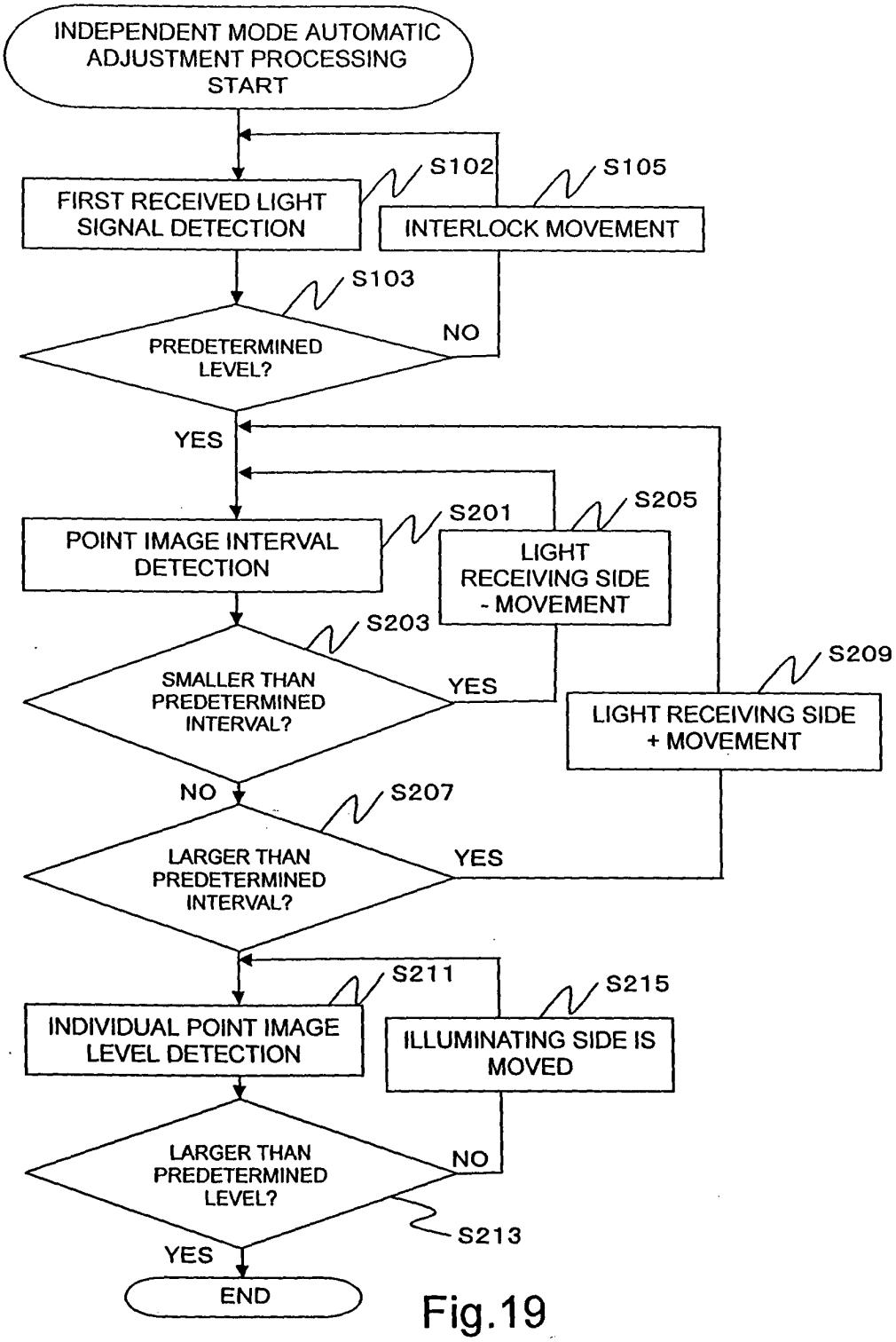

INDEPENDENT MODE AUTOMATIC ADJUSTMENT PROCESSING START
FIRST RECEIVED LIGHT SIGNAL DETECTION
S102
INTERLOCK MOVEMENT
S105
S103
PREDETERMINED LEVEL?
NO
YES
POINT IMAGE INTERVAL DETECTION
S201
LIGHT RECEIVING SIDE - MOVEMENT
S205
SMALLER THAN PREDETERMINED INTERVAL?
S203
YES
LIGHT RECEIVING SIDE + MOVEMENT
S209
NO
LARGER THAN PREDETERMINED INTERVAL?
S207
YES
INDIVIDUAL POINT IMAGE LEVEL DETECTION
S211
ILLUMINATING SIDE IS MOVED
S215
LARGER THAN PREDETERMINED LEVEL?
NO
S213
YES
END

Fig.19

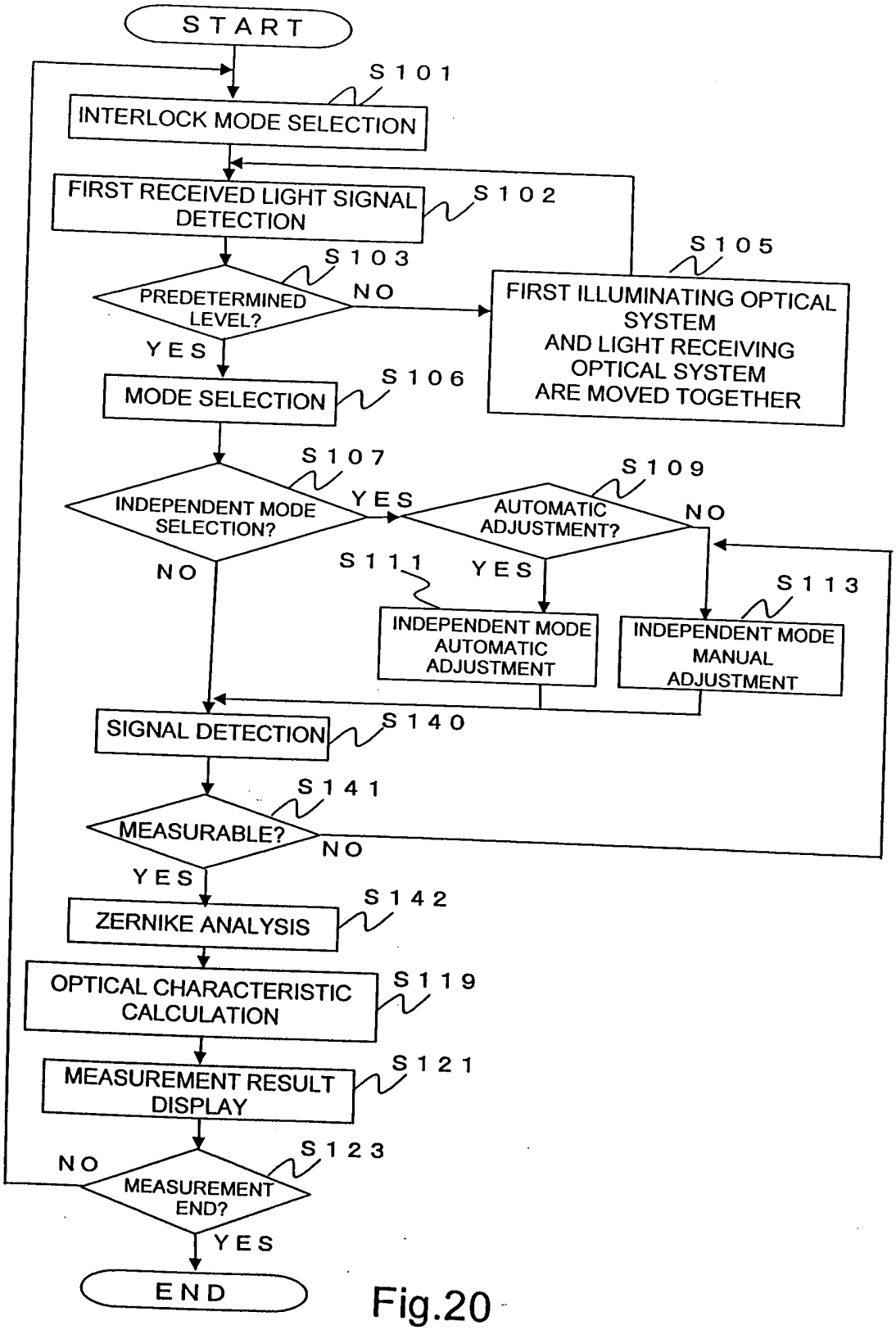
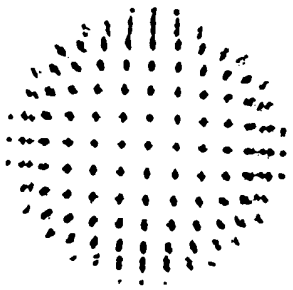
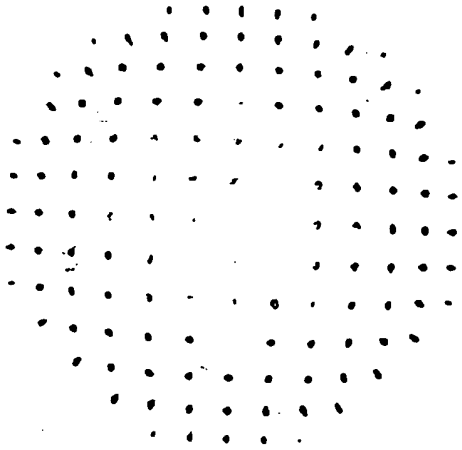

START
S101
INTERLOCK MODE SELECTION
FIRST RECEIVED LIGHT SIGNAL DETECTION
S102
S103
PREDETERMINED LEVEL?
NO
YES
S105
FIRST ILLUMINATING OPTICAL SYSTEM AND LIGHT RECEIVING OPTICAL SYSTEM ARE MOVED TOGETHER
MODE SELECTION
S106
S107
INDEPENDENT MODE SELECTION?
YES
NO
S109
AUTOMATIC ADJUSTMENT?
NO
YES
S111
S113
INDEPENDENT MODE AUTOMATIC ADJUSTMENT
INDEPENDENT MODE MANUAL ADJUSTMENT
SIGNAL DETECTION
S140
S141
MEASURABLE?
NO
YES
S142
ZERNIKE ANALYSIS
OPTICAL CHARACTERISTIC CALCULATION
S119
MEASUREMENT RESULT DISPLAY
S121
S123
NO
MEASUREMENT END?
YES
END

Fig.20



LIGHT RECEIVING SIDE 0 D

(a)



LIGHT RECEIVING SIDE – 5 D

(b)

Fig.21